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The Pear (*Pyrus* spp.) in Florida Home Gardens[1]

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Pyrus calleryana

View Assessment

North, Central, South

High Invasion Risk

Predicted to be invasive and not recommended by IFAS. Will be reassessed every 10 years. In particular cases, this species may be considered for use under specific management practices that have been approved by the IFAS Invasive Plant Working Group.

Pears are a great tree to grow for an edible landscape or fruit garden (Figure 1). However, pears are not adapted to all areas in Florida, and only a few cultivated varieties will grow well here. An adaptation to warm winters (low chill hours) and disease resistance are the main factors for success. According to the census of agriculture for Florida, there were at least 85 acres of pears under production in 2017, but 14 counties did not report acreage. Many plantings are just a few trees in backyards. This publication will provide information to help homeowners select and grow pears successfully in Florida.



Figure 1. Pear tree with fruit.
Credit: Chestnut Hill Nursery

Varieties

There are two groups of pears grown in the United States, *Pyrus communis* L., the European pear, and the Asian pear, *P. serotina* and *P. pyrifolia*, as well as hybrids between the two groups. Hybrid pears are suited to central and north Florida, but none are recommended south of Orlando.

Temperatures and diseases limit the varieties of pears that will grow in Florida. Temperatures of 26°F or below will usually kill open blossoms (Figure 2), so select varieties that will flower when temperatures in your area will be above this for most years (Table 1). Also, the number of chill hours in the winter (i.e., the amount of time temperatures are below 45°F) will affect which varieties will grow in your area. The information in Table 1 has been gleaned from various reports, only some of which were done by UF/IFAS. Reported research was often done in north Florida (Monticello).



Figure 2. Pear flowering.
Credit: UF/IFAS

Pollination

Most Florida varieties do not require cross-pollination but may have larger crops when planted with another variety. However, if Table 1 indicates that cross-pollination is required, be sure to plant another variety with a similar bloom date. Insects are still needed for pollination even if the variety can pollinate itself.

Propagation and Planting

Pears do not come true to seed and so are sold as grafted selected cultivars on suitable rootstocks (Figures 3–4). Pears grow best on well-drained, fertile, sandy loam soil, but they can be grown on a wide range of soil types. Pear trees in Florida should be grafted on *Pyrus calleryana* rootstocks. In a five-year study, the growth and survival of 'Flordahome' and 'Hood' were best on *P. calleryana*, followed by *P. betulaefolia*. The remaining rootstocks in the study (*P. communis* 'Old Home Farmingdale 51', 'Old Home Farmingdale 97', 'Old Home Farmingdale 333' and *Cydonia oblonga*) were unsatisfactory.



Figure 3. Nursery production of pear trees.
Credit: UF/IFAS



Figure 4. T-budded pear tree.
Credit: UF/IFAS

One- or two-year-old bare-root trees are best planted in late December through January to allow time for roots to establish before spring growth, but they may be planted any time during the dormant season. Container-grown trees may be planted at any time of the year if irrigation is carefully maintained.

When planting, take care not to bend or break roots to fit into the planting hole. Prune broken, damaged, or extra-long roots before planting. Dig the hole wide enough to accommodate the roots and deep enough to keep the plant at the same soil depth as found at the nursery, with the top root close to the soil line. Water in the soil around the roots as you replace it in the hole to remove air bubbles and provide good contact between the soil and the roots. Create a berm of soil around the plant that will hold several gallons of irrigation water in the root zone, and water well. Do not fertilize the trees for a month after planting to allow the roots to establish in the soil.

Cultivation

Pear tree roots are close to the surface. Maintain a weed-free area from the trunk out about two feet with hand-weeding, shallow hoeing, or mulch. Be aware that pear bark is thin, and postemergent chemical herbicides like glyphosate can be taken up through the bark to damage tree growth. Trunk wraps can protect the tree from herbicide application and mower or Weed-eater damage.

Irrigation

Soil type and rainfall will determine the frequency of irrigation. Sandy soils require more frequent irrigation.

When irrigating, thoroughly wet all areas under the tree to at least a foot deep. Applications every 7–10 days may be required in dry seasons. On sandy soils, frequent light irrigations are better than less frequent heavy irrigations. Mature trees may require 50+ gallons per tree, and young trees require 2–3 gallons at each application.

Fertilization

UF/IFAS has not researched fertilizer requirements for pear. Therefore, we suggest a general fertilizer like 6-6-6 or 8-8-8. Apply a total of about 1.5 pounds of this fertilizer for each year of tree age with a maximum of 15 pounds per tree. Applications should be divided into one in January and one in June or made with a controlled-release fertilizer that will release over a time specified on the label. The best fertilizer for pears will include magnesium and micronutrients like iron, manganese, zinc, and boron. Broadcast the fertilizer under the tree, and do not band or apply to a few spots. Excessive fertilizer will stimulate overly vigorous growth and increase susceptibility to fire blight.

Training and Pruning

Pear trees have a very strong tendency to produce upright growth and branches with narrow crotch angles (Figure 5). Pears are pruned to remove dead or diseased wood and to shape the tree to improve branch strength and keep the fruiting area within reach. Excessive pruning may encourage vigorous growth that is more susceptible to fire blight. Trees are generally pruned to a modified leader system to keep the center more open and encourage the tree to spread, because pear trees generally have very upright growth. The modified leader is created by selecting three to four upright main branches from the central trunk and pruning them to increase lateral growth. Remove other main branches to keep the canopy open to air movement. See Figure 6 for details.

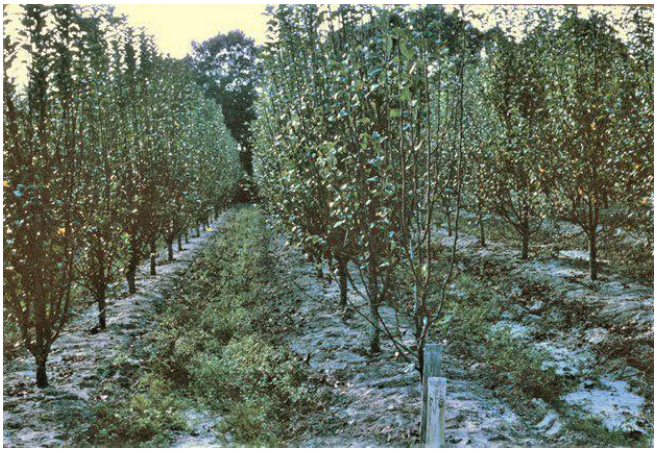


Figure 5. 'Carnes' pear. Upright growth typical of pear trees.
Credit: UF/IFAS

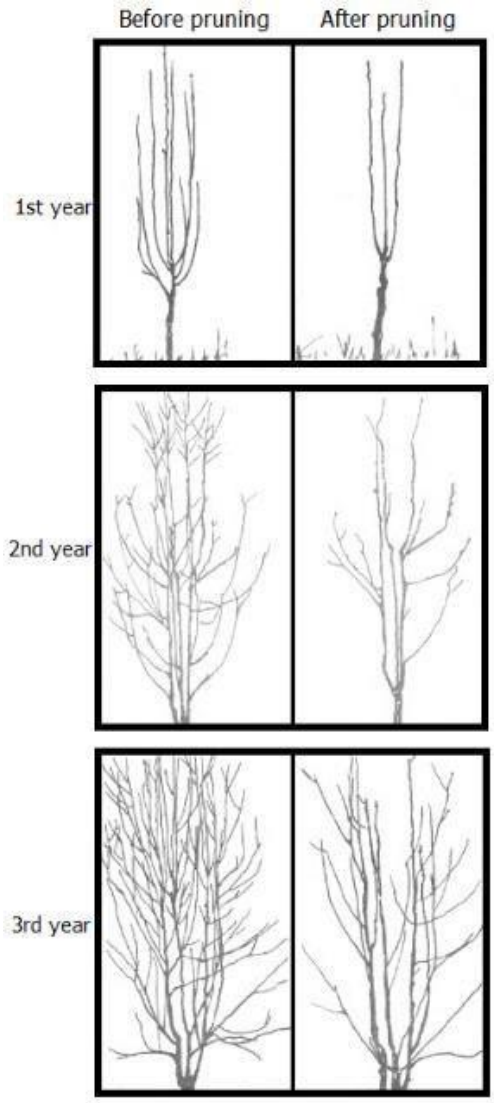


Figure 6. Modified leader training system and pruning pear trees by year.
Credit: UF/IFAS

Harvesting and Storage

Pear fruit do not ripen properly on the tree. Fruit left on the tree soften irregularly and may manifest core softening and increased prevalence of stone cells, which gives the fruit a gritty texture. Harvest fruit when they begin to turn yellowish in color (Figure 7). Fruit can be stored at room temperature to fully ripen. Place fruit in a paper bag or newspaper to promote the release of ethylene gas and accelerate fruit ripening. Also, fruit may be stored before ripening in the refrigerator at 32°F to 40°F for one month without a significant loss in quality.



Figure 7. Harvest of 'Pineapple' pears.
Credit: Chestnut Hill Nursery

Pest Control

Fire Blight

Fire blight (*Erwinia amylovora*) is a bacterial disease that enters flowers and young growth, causing blackening and a characteristic "shepherd's crook" to the growth. Older infections can move down the stem and cause black cankers on branches and trunks. Fire blight is generally a cool-weather disease, only occurring in the spring. Prune out blackened growth eight to ten inches below the affected area, and burn or dispose of the prunings. Pruning tools may spread the bacteria, so sterilizing pruning tools between cuts or between trees is recommended. Copper fungicide during bloom may be used to help control this disease. Follow label instructions for rates and reapplications.

Fungal Leaf Spot

Pear leaf spot (*Fabraea maculata*) can cause leaves to turn brown and fall off the tree on some varieties (Figure 8). Prevent this damage by applying a copper fungicide at 10-to-14-day intervals starting immediately after bloom. Follow label instructions for rates. Copper fungicides may cause fruit russeting. Selecting a variety that is resistant to leaf spot makes maintenance of pear trees much easier.



Figure 8. Pear leaf spot in Florida.
Credit: UF/IFAS

Botryosphaeria

Botryosphaeria canker is incited by a number of ligninolytic fungi, including *B. dothidea*, *B. ribis*, *B. rhodina*, and *B. obtusa*. They cause black cankers in the wood of pear and are especially prevalent on some Asian pears. There is no good chemical control. The recommendation is to maximize air flow through the canopy and avoid the formation of narrow crotch angles.

Scale Insects

Several scale insects may attack pear leaves, twigs, branches, and fruit. Apply horticultural oil sprays during the dormant season (mid-January is best) to control. Follow label instructions for rates.



Figure 9. 'Baldwin' pear.
Credit: Chestnut Hill Nursery



Figure 10. 'Flordahome' pear.
Credit: Plant Me Green Nursery



Figure 11. 'Hood' pear.
Credit: Chestnut Hill Nursery



Figure 12. 'Kieffer' pear.
Credit: Chestnut Hill Nursery



Figure 13. 'Le Conte' pear.
Credit: Chestnut Hill Nursery



Figure 14. 'Orient' pear.
Credit: UF/IFAS

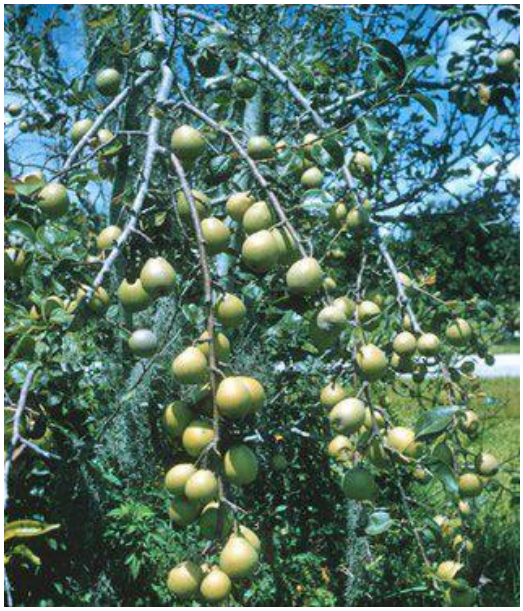


Figure 15. 'Pineapple' pear.
Credit: UF/IFAS



Figure 16. 'Tenn' Pear.
Credit: Just Fruits and Exotics

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Table 1. Pear varieties and characteristics.

Variety	Growing Area	Flowering	Ripens	Uses	Disease Susceptibility	Requires Cross-Pollination?
Baldwin (Figure 9)	North and central (150 chill hours)	Mid–late (March)	Late Aug–Sept	Fresh and canning	Moderate fire blight and leaf spot resistance	Yes
Carnes (Figure 5)	North	Mid–late (March)	July	Fresh and canning	Moderate fire blight resistance, susceptible to leaf spot	Yes
Flordahome (Figure 10)	North and central (150 chill hours)	Early	July–Aug	Fresh and canning	Fire blight and leaf spot resistant	Partially
Hood (parent of Flordahome) (Figure 11)	North and central (160–260 chill hours)	Early (mid-March in north FL)	Mid-July	Fresh and canning	Moderate fire blight resistant, moderate leaf spot resistance	No
Kieffer (Figure 12)	North (350–400 chill hours)	Late (late March in north FL)	Mid-Aug–Sept	Canning	Fire blight susceptible, fair resistance to leaf spot	No
Le Conte (Figure 13)	North and central (250–300 chill hours)	Late	July–Aug	Fresh	Somewhat susceptible to fire blight	Yes
Orient (Figure 14)	North and central	Early (early to mid-March in north FL)	Late July–early Aug	Canning	Very fire blight resistant, resistant to leaf spot	No
Pineapple (Figure 15)	North and central	Early (early March in north FL)	Early Aug	Canning	Very fire blight resistant, moderate resistance to leaf spot	Partially
Shinseiki	North	Late	Mid-July–Aug	Fresh	Moderate fire blight resistance	Yes
Tenn (or Tennessee) (Figure 16)	North (350–400 chill hours)	Early (early March in Gainesville)	Early (early Sept in Gainesville)	Fresh (small fruit)	Resistant to fire blight, moderate resistance to leaf spot	Partially
Ya Li	North	Late	Aug–mid-Sept	Fresh	Susceptible to fire blight	Yes
20th Century or Nijisseiki	North	Late	August	Fresh	Moderate fire blight resistance	Yes

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Use pesticides safely. Read and follow directions on the manufacturer's label.

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